



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

10/15

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/632,637 | 07/31/2003 | Wyatt Thomas Riley | 020293 | 2763 |
| 23696 | 7590 | 05/16/2006 | EXAMINER | |
| QUALCOMM, INC 5775 MOREHOUSE DR. SAN DIEGO, CA 92121 | | | NGUYEN, TU X | |
| | | ART UNIT | | PAPER NUMBER |
| | | | | 2618 |

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/632,637 | RILEY, WYATT THOMAS |
| | Examiner | Art Unit |
| | Tu X. Nguyen | 2618 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 31 July 2003.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-69 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-69 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/17/04.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ .
5) Notice of Informal Patent Application (PTO-152)
6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-9, 11, 15-19, 24-31, 35-38, 41-58, 61-69, are rejected under 35 U.S.C. 102(e) as being anticipated by Edge et al. (US Pub. 2003/0069033).

Regarding claims 1, 24 and 47, Edge et al. disclose a method comprising:

receiving signals from a satellite navigation system and signals from a wireless communication system (see fig.1); and

determining a position solution for a mobile unit as a function of the received signals using a synchronization bias that defines a difference between a system time for the satellite navigation system and a system time for the wireless communication system (see par.035, 049).

Regarding claims 2, 48, 52, 62 and 66, Edge et al. disclose computing the system time for the satellite navigation system; computing the system time for the wireless communication system as a function of the computed system time of the satellite navigation system and the synchronization bias; and computing a position solution as a function of the received signals and the computed system times (see par.080).

Regarding claims 3 and 51, Edge et al. disclose the synchronization bias constrains the system time of the wireless communication system within a range of time from the system time of the satellite navigation system (see fig.4).

Regarding claims 4, 28, 36, 44, 52 and 63 Edge et al. disclose the synchronization bias defines an expected time offset between the system time for the satellite navigation system and the system time for the wireless communication system (see fig.4).

Regarding claims 5, 29, 45 and 53, Edge et al. disclose computing a position solution comprises computing a latitude, a longitude and an altitude for the mobile unit (see par.080).

Regarding claims 6 and 54, Edge et al. disclose the satellite navigation system comprises a Global Positioning System (GPS) (see par.040).

Regarding claims 7, 30 and 55, Edge et al. disclose computing a position solution comprises applying hybrid position calculation techniques to compute the position solution as a function of the signals received from the satellite navigation system and the signals received from the wireless communication system (see fig.1).

Regarding claims 8, 31 and 56, Edge et al. disclose computing a position solution comprises applying asynchronous techniques to compute the system times in accordance with the synchronization bias (see par.009).

Regarding claims 9, 35 and 57, Edge et al. disclose receiving data from a component of the wireless communication system that defines the synchronization bias (see par.044-045).

Regarding claim 11, Edge et al. disclose receiving a total of M signals from the wireless communication system and the satellite navigation network; generating M distance measurements from the signals; and detecting the presence of one or more erroneous distance

measurements from one or more of the signals based on the M distance measurements and the synchronization bias (see par.010).

Regarding claim 15, Edge et al. disclose a method comprising: receiving a request (see par.014, “request” is inherent in cellular communications) from a mobile unit operating within an environment having a satellite navigation system and a wireless communication system; and communicating to the mobile unit, in response to the request, synchronization bias data that constrains a system time of the satellite navigation system as a function of a system time of the wireless communication system (see par.035).

Regarding claim 16, Edge et al. disclose 16. retrieving the synchronization bias data from a database (see par.049).

Regarding claim 17, Edge et al. disclose 17 retrieving from a database comprises retrieving from a database a synchronization bias specific to the requesting mobile unit (see par.014, 049).

Regarding claim 18, Edge et al. disclose identifying a current region of the wireless communication system for the requesting mobile unit; and retrieving the data from the database based on the identified region (see par. 014, 035).

Regarding claim 19, Edge et al. disclose 19 receiving data from the mobile unit that describes a computed synchronization bias; and updating the database based on the received data (see par.014).

Regarding claims 25 and 41, Edge et al. disclose the satellite navigation system comprises a Global Positioning System (GPS), and the wireless communication system

comprises a Code Division Multiple Access (CDMA) wireless communication system (see par. 023-24).

Regarding claims 26 and 42, Edge et al. disclose the apparatus comprises a mobile GPS receiver (see par.024).

Regarding claims 27 and 43, Edge et al. disclose the synchronization bias constrains the system time of the wireless communication system within a range of time from the system time of the satellite navigation system (see par.049).

Regarding claim 37 Edge et al. disclose the processor comprises a digital signal processor (see par.004, “digital signal processor” is inherent).

Regarding claim 38 Edge et al. disclose a system comprising:

a server (see 330, fig.3) to store synchronization bias data that defines a difference between a system time for a satellite navigation system and a system time for a wireless communication system; and

a device to receive the synchronization bias data from the server, and determine a position solution as a function of the synchronization bias data and signals received from the satellite navigation system and the wireless communication system (see par.035, 049).

Regarding claim 46 Edge et al. disclose the device comprises one of a mobile unit, a location server, a Position Determination Entity PDE, a Location Measuring Unit LMU (see 106, fig.1 and par.010), a Serving Mobile Location Centers SMLC (see par.035), a Wireless Location Gateway WLG, and a Mobile Location Center MLC.

Regarding claims 50 and 58 Edge et al. disclose a computer-readable medium comprising instructions to cause a processor to determine a position solution for a mobile unit as a function

of signals received from a satellite navigation system, signals received from a wireless communication system, and a synchronization bias that defines a difference between system times for the satellite navigation system and the wireless communication system (see par.035, 042 and 049).

Regarding claims 61 and 64, Edge et al. disclose a method comprising:

receiving sets of position related measurements for a device, the measurements of each of the sets having a common bias with respect to the measurements of the other set; and determining a position solution for the device as a function of the measurements and the common bias (see par. 007, 009-010).

Regarding claim 62, Edge et al. disclose receiving sets of position related measurements comprises receiving a first set of position related measurements from a satellite navigation system and a second set of position related measurements from a wireless communication system (see par.080).

Regarding claim 63, Edge et al. disclose the common bias represents a difference in system times for the satellite navigation system and the wireless communication system (see par.049).

Regarding claim 64, Edge et al. disclose a method comprising: receiving sets of position related measurements for a device from a plurality of systems; determining different system times for each of the systems; and determining a position solution for the device as a function of the measurements and the system times (see par. 007, 010, 049).

Regarding claim 65, Edge et al. disclose the measurements of each of the sets having a common bias with respect to the measurements of the other set (see par.010).

Regarding claims 67-69, Edge et al. disclose receiving sets of position related measurements comprises receiving a first set of position related measurements from a satellite navigation system and a second set of position related measurements from a wireless communication system (see par.010).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 10, 14 and 32, are rejected under 35 U.S.C. 103(a) as being obvious over Edge et al. in view of Sheynblat et al. (US Patent 6, 707,422).

Regarding claims 10 and 14, Edge et al. fail to disclose applying an altitude-aiding technique to determine an extra measurement for use in determining the position solution.

Sheynblat et al. disclose applying an altitude-aiding technique to determine an extra measurement for use in determining the position solution (see col.16 lines 53-55). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Edge et al. with the above teaching of Sheynblat et al. in order to provide measurement in a line of sight environment.

Regarding claim 32, Edge et al. fail to disclose Receiver Autonomous Integrity Monitoring (RAIM).

Sheynblat et al. disclose Receiver Autonomous Integrity Monitoring (RAIM) (see col.17 lines 16-20). Therefore, It would have been obvious to one of ordinary skill in the art at the time

the invention was made to modify the system of Edge et al. with the above teaching of Sheynblat et al. in order to provide the fault detection and isolation process.

5. Claims 12-13 and 33-34, are rejected under 35 U.S.C. 103(a) as being obvious over Edge et al. in view of Tamura et al. (US Pub. 2001/0026241).

Regarding claims 12-13 and 33-34, Edge et al. fail to disclose wherein M>4.

Tamura et al. disclose wherein M>4 (see s7, fig.3). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Edge et al. with the above teaching of Tamura et al. in order to provide a precise position with a high degree of accuracy.

6. Claims 20-23 are rejected under 35 U.S.C. 103(a) as being obvious over Edge et al. in view of Wesby et al. (US Patent 6,847,826).

Regarding claims 20-23, Edge et al. fail to disclose comparing the computed synchronization bias to a threshold bias; and determining a functional status of a component within the wireless communication system based on the comparison (see col.10 lines 47-54). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Edge et al. with the above teaching of Wesby et al. in order to detecting the error base on threshold setting.

7. Claims 39-40 and 59-60, are rejected under 35 U.S.C. 103(a) as being obvious over Edge et al.

Regarding claims 39-40 and 59-60, Edge et al. fail to disclose the server selectively retrieves synchronization bias data from a database based on an identifier for the device. The Examiner takes an Official notice is taken that the concept providing information to an identified

Art Unit: 2618

mobile terminal is well known in the art. It would have been obvious the system transmit information point-to-point a each of terminal based on a terminal identification.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed Tu Nguyen whose telephone number is 571-272-7883. The examiner can normally be reached on Monday through Friday from 6:30AM-2:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


May 11, 2006


EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600